

# GOES-R Program



## CIMSS/ASPB Participation

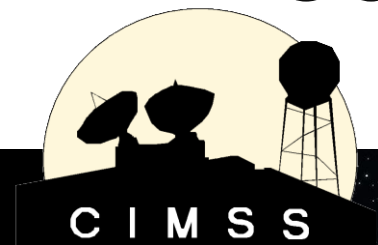
### GOES-R Proving Ground Status

Wayne Feltz, Mike Pavolonis, Tim Schmit, Andy Heidinger, Jordan Gerth, Scott Bachmeier, Scott Lindstrom, Justin Sieglaff, Lee Cronce, Robert Aune, Gary Wade, Brad Pierce, Kaba Bah, Will Straka, Jason Otkin, Sarah Monette, Chris Velden, Ralph Petersen, Russ Dengel, Joleen Feltz, Dan Hartung

November 7, 2011



- Demonstration of GOES-R AWG applications at National Center Testbeds
- AWIPS Weather Event Simulator (WES) for the ABI.
- AWIPS-2 status
- NWA/GUC participation
- GOES-15 Update





The following list of products offers opportunity for near-real time Warning Related utility. **Now Available – Orange, Near Future - Blue**

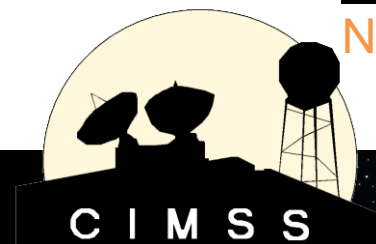
## Baseline Products:

- Volcanic Ash: detection & Height - Alaska, Pacific, and AWC
- Cloud Top Phase/Cloud Type – Alaska, AWC, and OPC/HPC
- Cloud and Moisture Imagery – All testbeds
- Hurricane Intensity – NHC
- Total Precipitable Water - Pacific
- Fire/Hot Spot Characterization – HWT (Hydrologic and Fire, WRH)

## Post Option 2 Products:

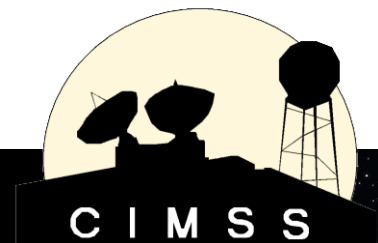
- Aircraft Icing Threat – NASA LaRC, Bill Smith Jr
- Turbulence - AWC
- Convective Initiation (UWCI used where SATCAST not automated yet)
- Enhanced “V” / Overshooting Top Detection – HWT and HPC
- Low Cloud and Fog – AWC and Alaska
- SO<sub>2</sub> Detection – Alaska, AWC, and Pacific
- R3 Products:

Nearcasting – AWC, HWT, HPC



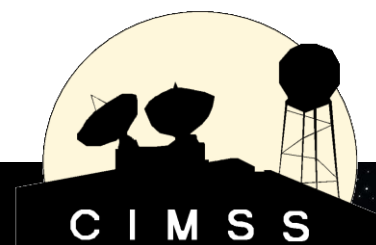
## GOES-R PG HWT Testbed

- WRF simulated radiances, Nearcasting, UWCI evaluation took place in May-June 2011, planning on 2012 participation
  - SFOV GOES Sounder TPW
  - CTC within thin cirrus
- Distributed GOES-R Fire hotspot and intensity proxy products (GOES imager based) to SPC for fire weather testbed, now AWIPS/N-AWIPS
- AIRS/CrIS stability
  - Ready to hand off to polar proving



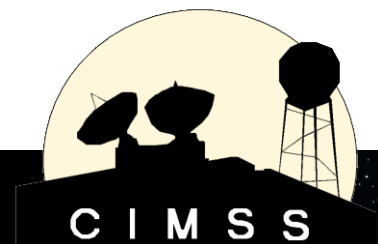
## GOES-R PG AWC/NWSTC Testbed Progress

- AWC GOES-R Research to Operations position advertised again
- NWSTC position -> Chad Gravelle will start in MSN on 14<sup>th</sup> Nov. for initial training then stationed in Kansas City in mid-Dec
- UWCI, OTTC, fog/low cloud, and cloud top phase/cloud type are available within N-AWIPS for evaluation
- Volcanic ash and SO<sub>2</sub> pending until GOES-R R to O expert in place, we will work with Chad as a possible solution in mean time
- UW-CIMSS satellite applications “boot camp” delayed until spring 2012, more to come



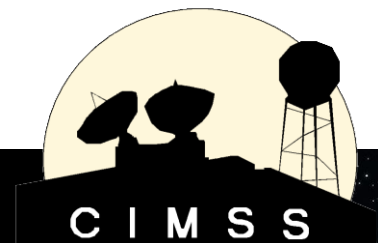
## GOES-R PG Alaska/AAWU Testbed

- Volcanic ash,  $\text{SO}_2$ , fog/low cloud, cloud top phase/cloud type have been available in AWIPS at all WFO's in AK and the AAWU since January 2011
- Live training sessions were conducted and a volcanic ash VISITview module is now available (VISIT training for fog and cloud phase will be made available in the next month or so)
- A volcanic ash WES case is nearly complete
- UAF will be gathering formal feedback on all products/Alaska WES



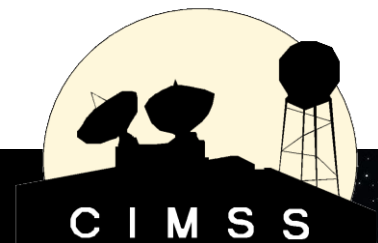
## GOES-R PG Pacific Testbed

- Coordinating with Mark DeMaria and Steve Businger
- U of Hawaii will hire post-doc, integration with commence once hire is in place
- CIMSS/ASPB Scientist/research transitions will occur in spring 2012
- UWCI now working in Hawaii domain ready for AWIPS integration
- Jordan is available in Jan/Feb?
- Volcanic ash and SO<sub>2</sub> (from MODIS) were added to the plan
- CIMSS Morph TPW is available in AWIPS/GOES SFOV Sounder next year



## GOES-R PG Hydromet Prediction Center Testbed

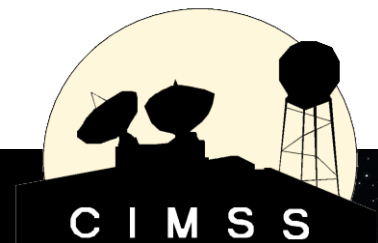
- Simulated ABI Imagery (bands 8-16) over the CONUS
- Hourly ABI IR Bands using NSSL WRF
- Request for nearcasting product for evaluation

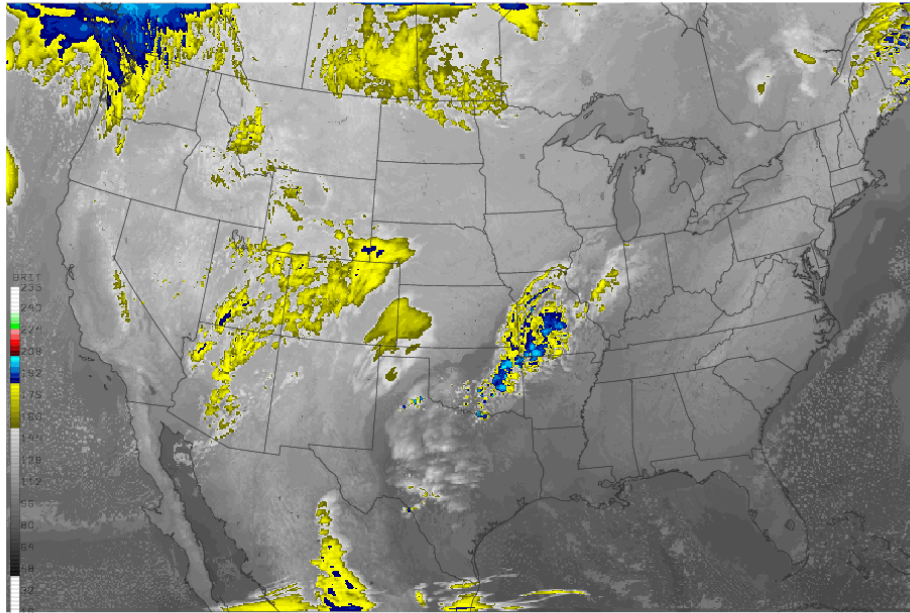




## GOES-R PG OPC/SAB Testbed

- Simulated ABI Imagery (bands 8-16) over the CONUS, follow HPC/SPC methodology for delivery, N-AWIPS preferred, SAB wanted McIDAS formatted, sent ADDE server info to Jamie K.
- UW-CIMSS providing overshooting-top/enhanced-V data (same methods as SPC delivery), training now available via VISITview and available for GOES-W, OPC LDM should be available today
- Cloud top height and cloud top phase from GOES will be made available
- Volcanic ash due for integration on Nov 14<sup>th</sup>
- Derived stability indexes (GOES Sounder SFOV), delayed until 2012

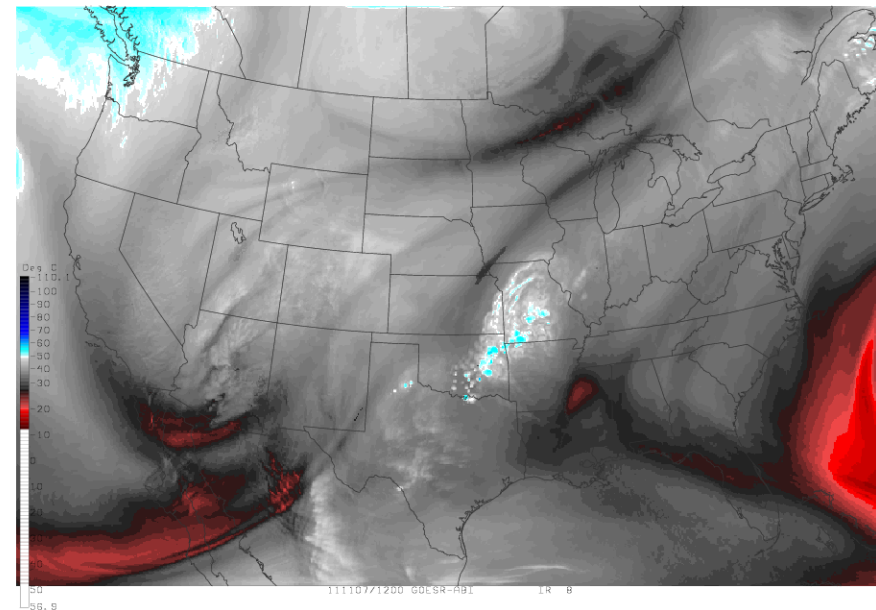




Band 15: Infrared

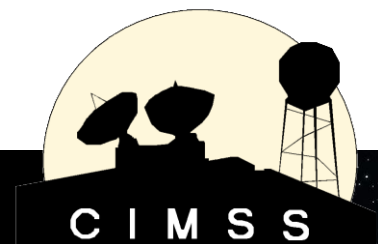
Credit: Michael Folmer

Band 8: Water Vapor



## GOES-R PG Hurricane Center Testbed

- Overshooting Tops (OTs)
  - OTs were tracked within 200 km of 5 tropical cyclones (TCs) centers during the 2011 season
    - 4 TCs featured 15-minute temporal resolution and were confined to east of 55° W.
    - 1 TC featured 30-minute temporal resolution
  - METEOSAT imagery with 15-minute temporal resolution became available beginning June 1
  - On October 11, full Atlantic Basin imagery became available at 30-minute temporal resolution
    - METEOSAT and GOES CONUS imagery available at 15-minute data

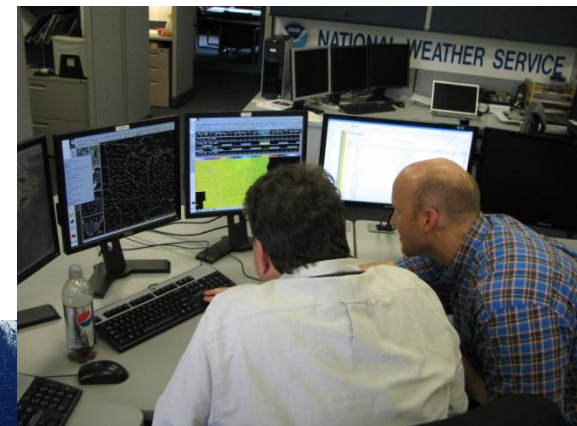


- April 27, 2011 WES example
- Working on Alaska Volcanic WES case

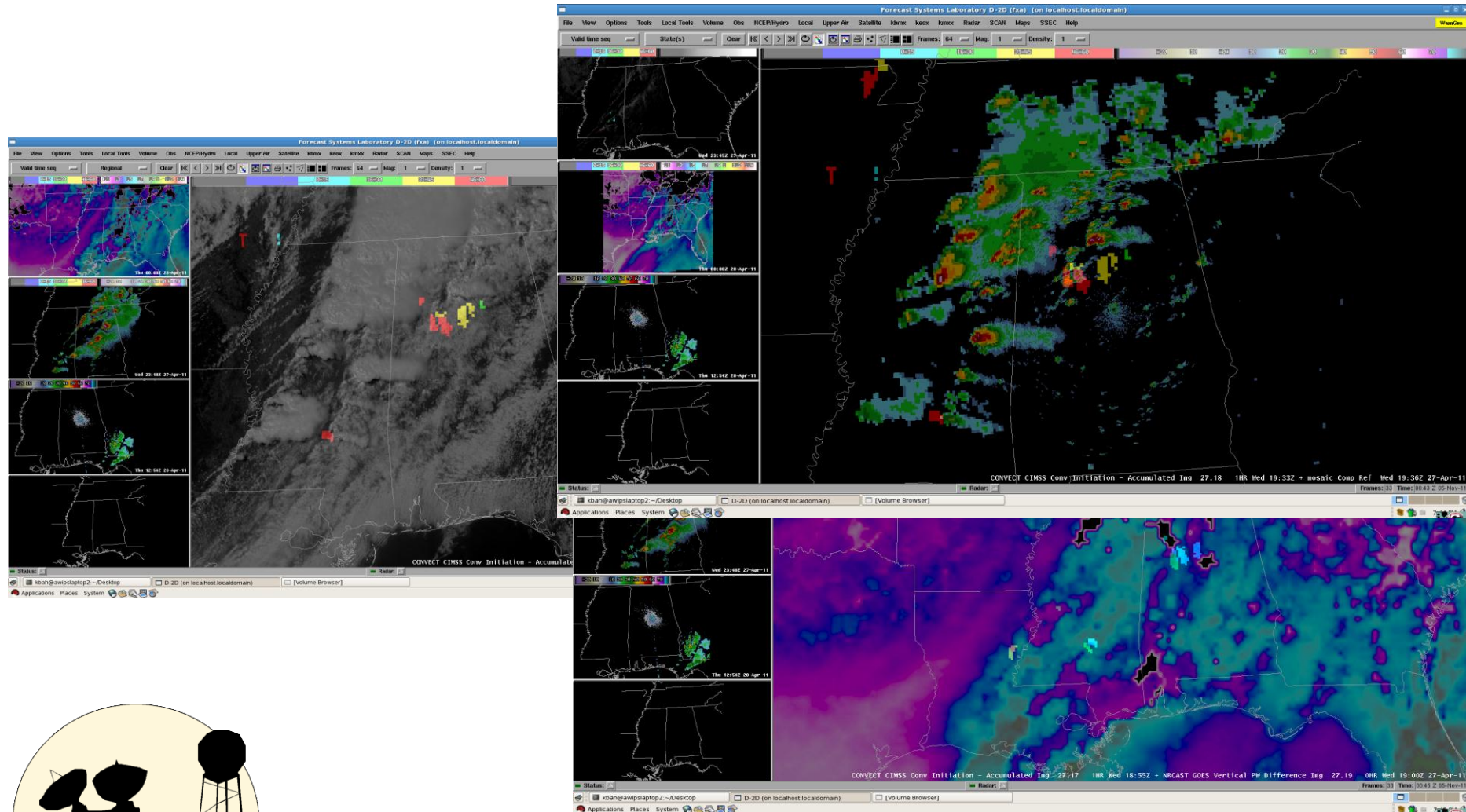




- August to October 2011
- Emphasis was on GOES Low Cloud/Fog probabilities and Synthetic GOES R imagery
- Developers trained on how the products are derived and how they should be used
- Products viewed on AWIPS and on-line
- Forecaster feedback: blog entries

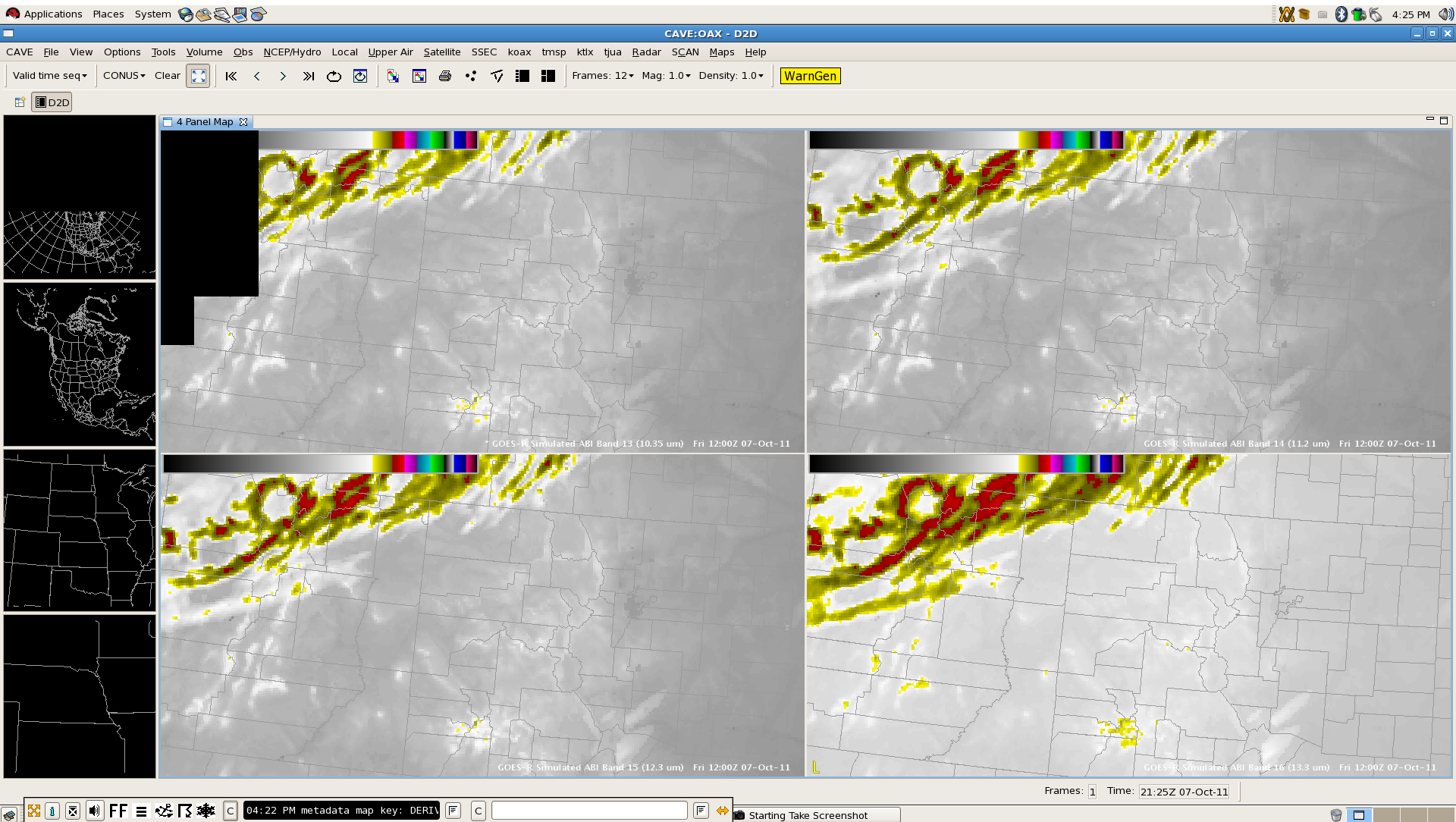
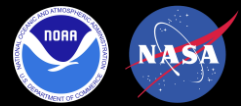


## April 27, 2011 WES example





# Panning and Zooming in AWIPS II

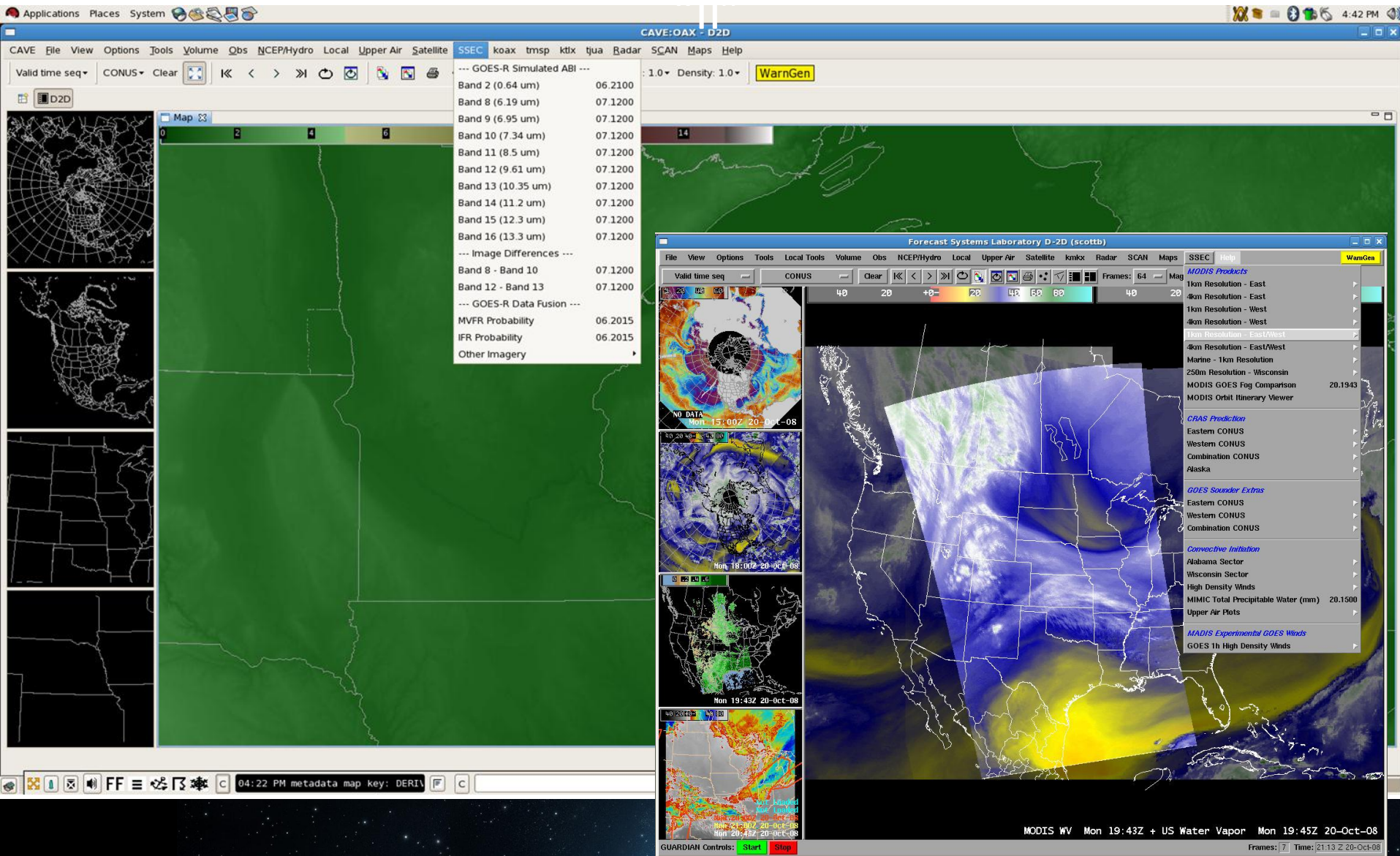


with GOES-R Simulated ABI Channels 13 through 16



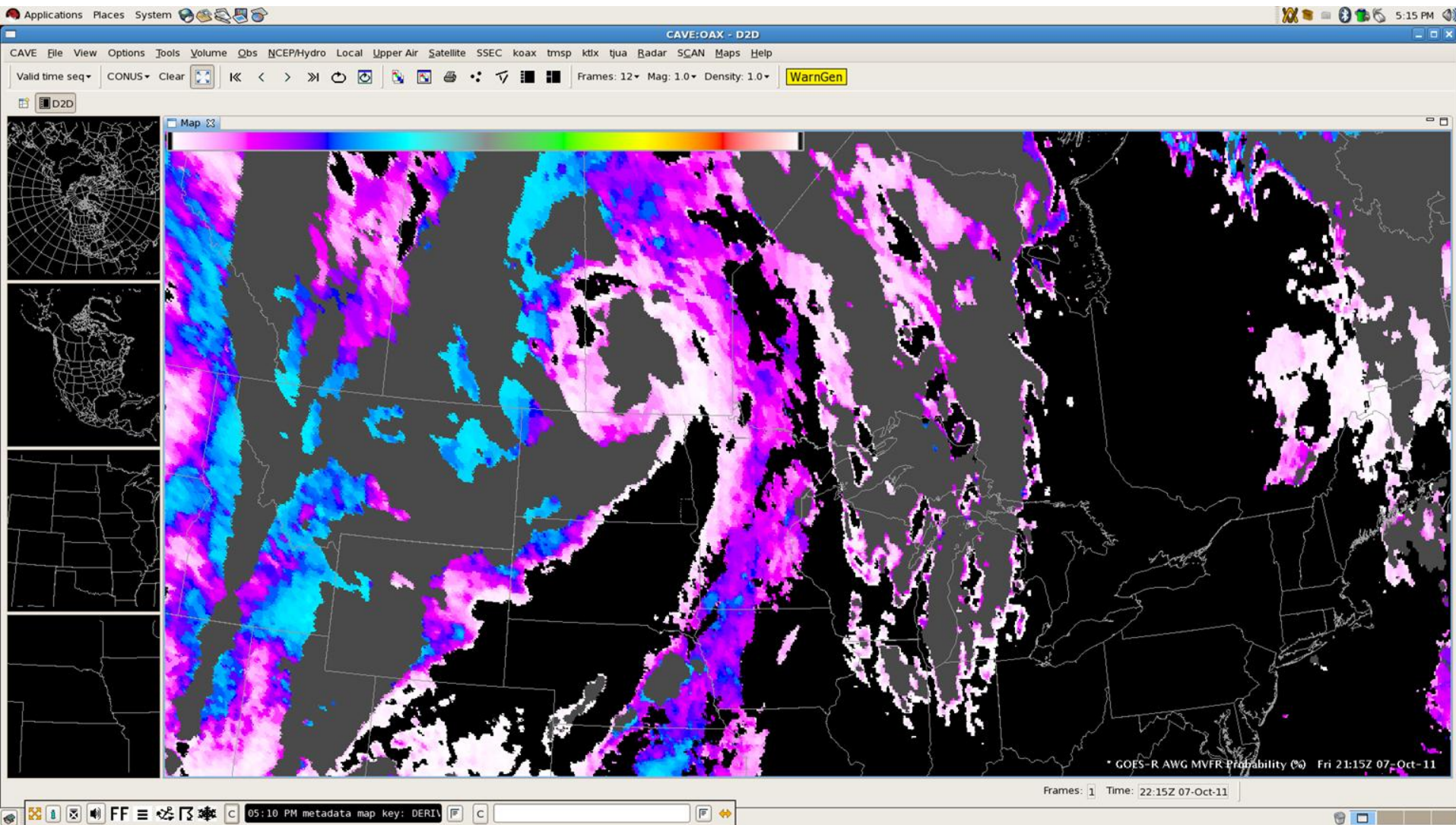
# The Challenge:

## Assuring CIMSS products are available in AWIPS "II"





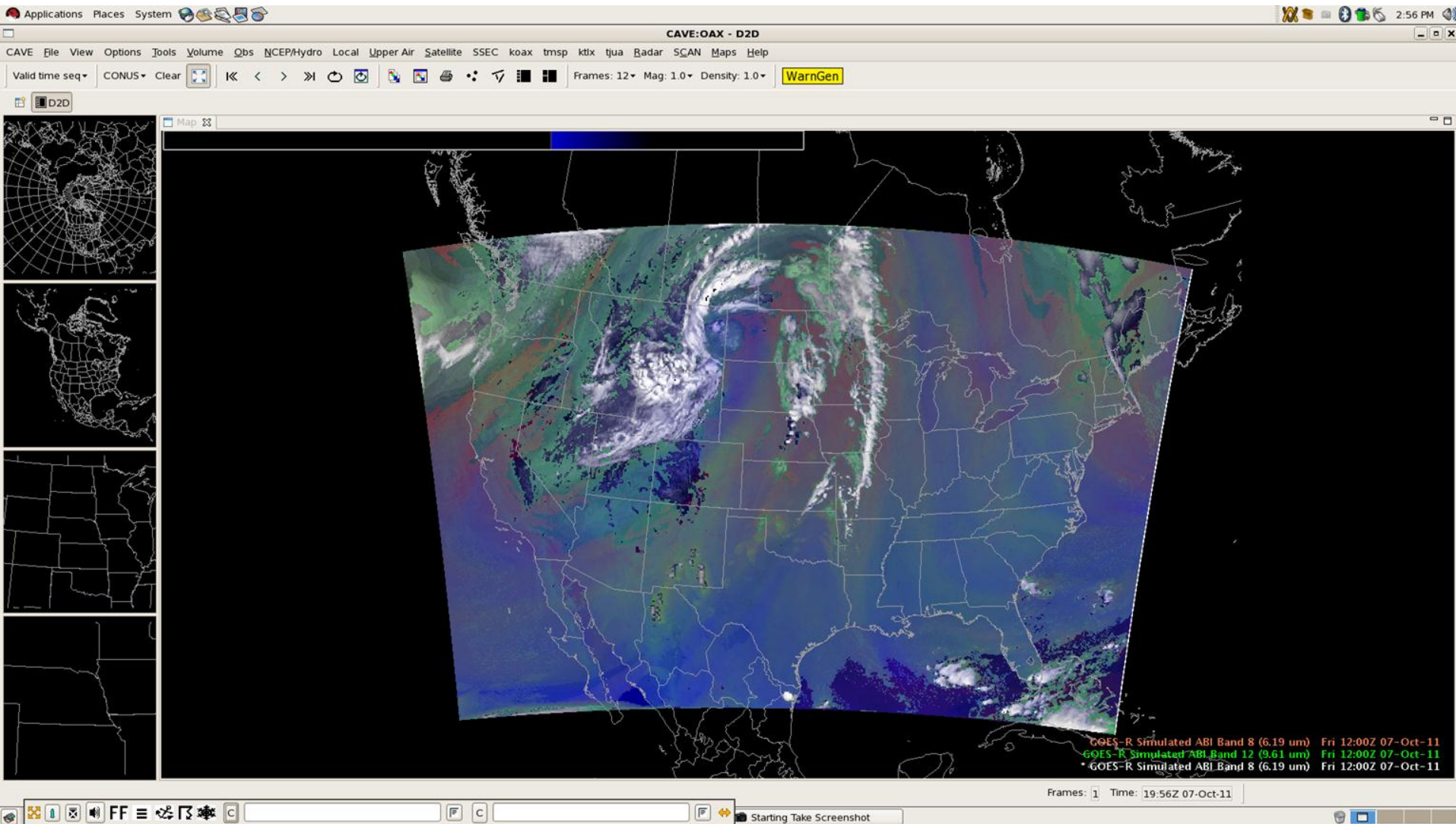
# Example: AWG MVFR Probability (Day)



The **probability of MVFR** product reports the probability that the cloud ceiling is < 3000 feet, regardless of surface visibility.



# Building an RGB: Composite



Composite clearly indicates trough over western United States, dry slot, and differential tropospheric moisture

## NWA/GUC

- <http://www.goes-r.gov/users/past-GUC7.html>
- J. Gerth and J. Li each gave an oral presentation on using satellite observations for weather forecasting during the plenary sessions targeted to the operational meteorology community; T. Schmit gave an oral overview presentation on the Advanced Baseline Imager (ABI).
- K. Bah, L. Counce, and G. S. Wade presented posters in a joint session with the 7th Geostationary Operational Environmental Satellite (GOES) Users' Conference.
- CIMSS also had a booth to showcase their role in the GOES-R Proving Ground and demonstrate the coming capabilities of the GOES-R atmospheric instruments.
- The 2012 NWA annual meeting will be held in Madison, Wisconsin, with substantial CIMSS participation on the program committee.

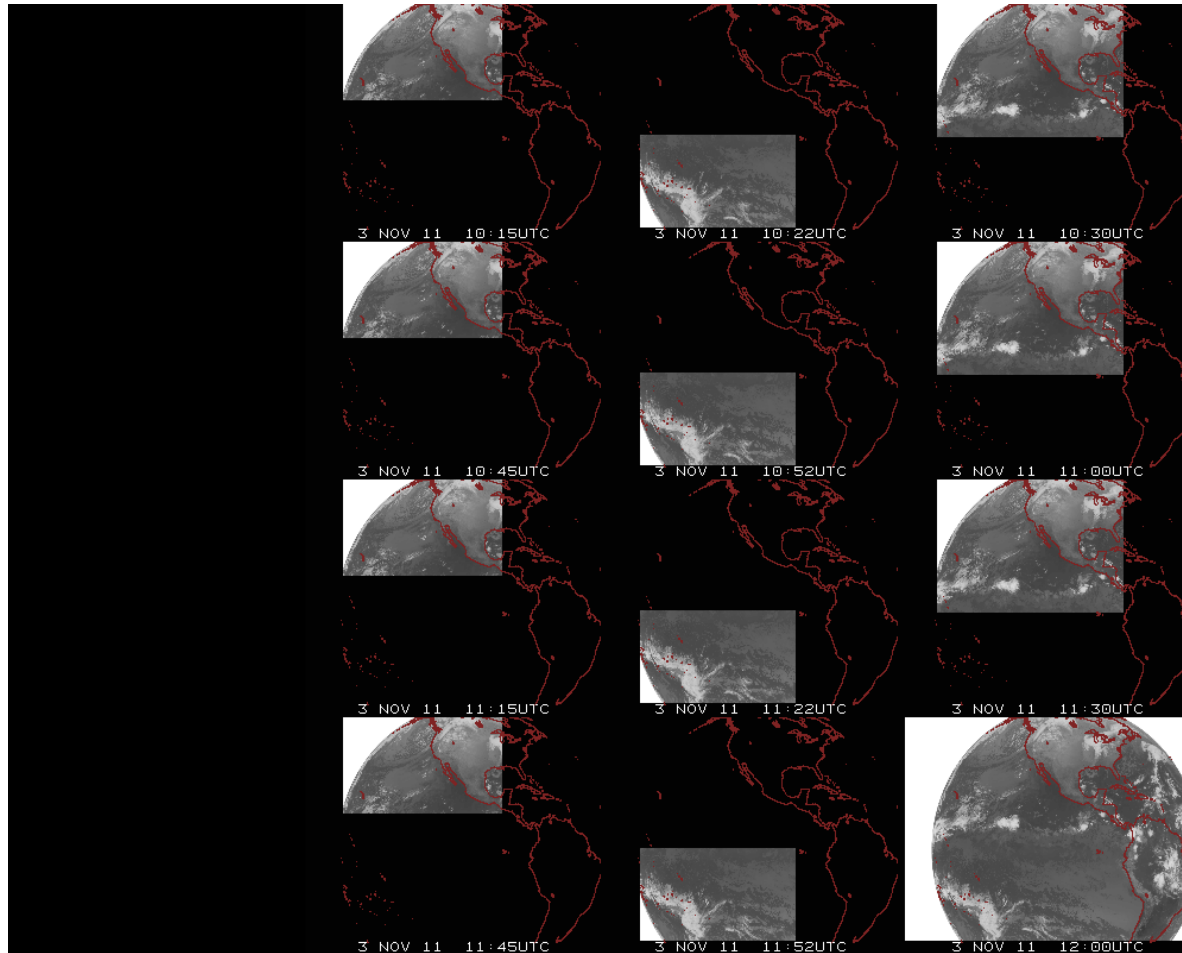


# Guess who won an award?





Recall, GOES-15 will go operational on December 6<sup>th</sup>.



<http://cimss.ssec.wisc.edu/goes/blog/archives/9103>

